Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte SABURO YOKOTA

Appeal No. 1998-2169
Application 08/610,069

HEARD: March 22, 2001

Before KIMLIN, PAK and WALTZ, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-19, all the claims in the present application. Claim 1 is illustrative:

> 1. An organic photoconductor comprising a cylindrical electrically conductive support and, formed thereon in this order, a charge-generating layer and a charge- transporting layer, the external surface of said cylindrical electrically conductive support having an index of surface area as defined by the following

> equation (I) of from 0.01 to 0.10, and said charge-generating layer having a multilayer structure comprising a charge-generating layer having n-type semiconductor characteristics and a charge-generating layer having p-type semiconductor characteristics:
>
> $$(S_a/S_m)-1 \qquad (I)$$
>
> wherein S_a is the actual surface area of the external surface of said cylindrical electrically conductive support and S_m, is the theoretical surface area thereof calculated on the assumption that said support is an ideal cylinder.

The examiner relies upon the following references as evidence of obviousness:

Honda et al. (Honda) 4,735,883 Apr. 05, 1988

Yokota et al. (Yokota) JP 07-160010 Jun. 23, 1995

Chem. Ab 123:301495, Abstract of JP 07-160010

Appellant's claimed invention is directed to an organic photoconductor comprising a cylindrical electrically conductive support which has an external surface having an index of surface area in the range of 0.01 to 0.10. The index of surface area is defined in the specification and claim 1. According to appellant, "the index of surface area of the present invention does not require expensive processing

techniques because it does not require surface finishing by turning." (page 2 of principal brief).

Appealed claims 18 and 19 stand rejected under 35 U.S.C. § 112, second paragraph. In addition, all the appealed claims stand rejected under 35 U.S.C. § 103 as being unpatentable over JP '010 in view of Honda.

Upon careful consideration of the opposing arguments presented on appeal, we will not sustain the examiner's rejections.

We consider first the examiner's rejection of claims 18 and 19 under 35 U.S.C. § 112, second paragraph. According to the examiner, the language of claim 18 is indefinite "because it is unclear how the photoconductor is 'used' in the instant claims" i.e., "[i]t is unclear if this is an intended use (in which case it provides no positive limitation to the claims), a functional limitation to the photoconductor, or an attempt to draft an apparatus claim." (page 3 of answer). In response, appellant maintains that the term "used" is not a recitation of intended use but "can be considered as containing a functional limitation" (page 5 of principal

brief). The examiner is not persuaded by appellant's explanation and reasons that "[s]tating that the photoconductor is 'used' in the apparatus does not clearly recite

that the photoconductor has the capability for such use. Rather, the claims state that the photoconductor is actually used in the apparatus" (page 6 of answer).

While the examiner is technically correct that the claim language "states that the photoconductor is so used not that it has the capability for this use" (page 6 of answer), we find that one of ordinary skill in the art, based on the present specifi-cation and file wrapper estoppel associated with appellant's statement that claim 18 recites a functional limitation and not an apparatus, would understand that the scope of claim 18 is limited to the organic photoconductor defined in claim 1 which has the capability of being used in an electrophotographic apparatus.

Turning to the § 103 rejection, the examiner recognizes that JP '010 doses not disclose the claimed index of surface

area for the conductive support. Therefore, the examiner relies upon Honda as evidence that "the surface roughness is a result effective variable for controlling interference" (page 7 of answer) and consequently, one of ordinary skill in the art would have arrived at appellant's index of surface area upon optim-izing the result effective variable.

Appellant, at pages 8 and 9 of the principal brief, offers calculations to demonstrate that when the D/R value of Honda is 0.035 and 0.07, the values disclosed in the reference, the corresponding indexes of surface area are 7.66×10^{-5} and 30.64×10^{-5}, respectively, which values are well below the lower limit of 0.01. The examiner does not refute the accuracy of appellant's calculations but mistakenly states that the Honda D/R value of 0.07 gives an index of surface area of 3.064×10^{4} (page 7 of answer, last two lines.) Manifestly, the value used by the examiner to support the conclusion that D/R values of 0.035 or higher would include values within the claimed range is an erroneous restatement of the value calculated at page 9 of appellant's principal brief,

namely, 30.64 x 10^{-5}. Furthermore, appellant demonstrates in calculations in the reply brief that a higher D/R value, 0.089, corresponds to an index of surface area of 0.0005 which is outside the claimed range. We not that the examiner has not criticized appellant's calculations in the reply brief.

Hence, while it is generally true that it is a matter of prima facie obviousness for one of ordinary skill in the art to optimize a result effective variable, it is not generally obvious for one of ordinary skill in the art to optimize outside of a range disclosed by the prior art. In re Sebek, 465 F.2d 904, 907, 175 USPQ 93, 95 (CCPA 1972).

Accordingly, based on the present record, we concur with appellant that the examiner has not established a prima facie case of obviousness for the claimed subject matter.

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is reversed.

REVERSED

EDWARD C. KIMLIN Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
THOMAS A. WALTZ Administrative Patent Judge	)

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